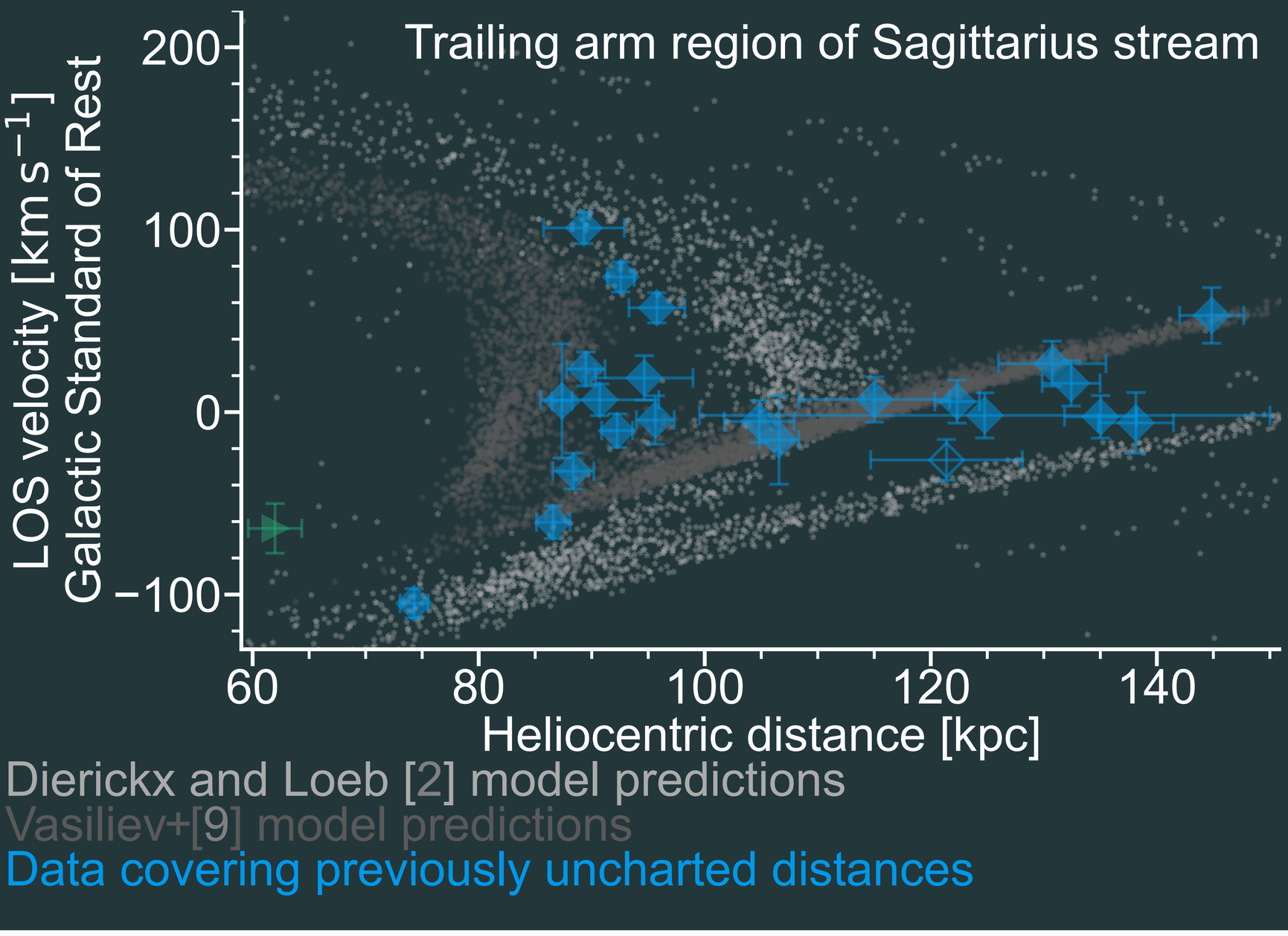

Trends in **velocity structure** of **sample blue horizontal branch stars agree with recent N-body models of tidal stripping of Sagittarius dwarf galaxy**

Characterizing the distant spur feature of the Sagittarius stream

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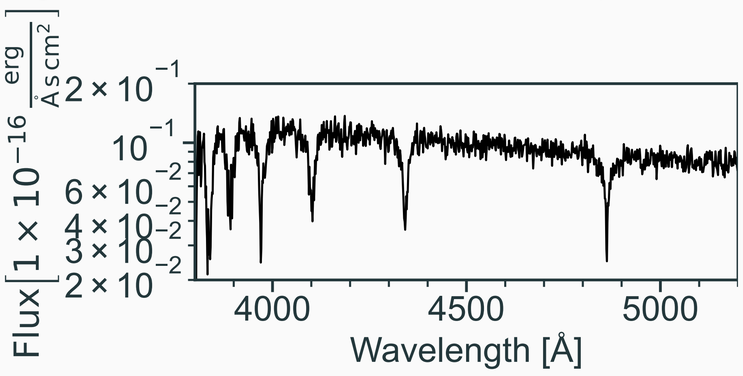
Motion data of stars in distant regions of the Sagittarius stream are constraining for its modeling efforts

Works by Dierickx and Loeb [2], Fardal+[3], and Vasiliev + [9] predict the existence of a distinct group of stars in the sky with velocities from several tens to over 100 km s^{-1}.

Observationally

- RR Lyrae stars [5] & blue horizontal branch stars [8] with reliable distance estimates from the Sun have been identified in the same distant arm of the Sagittarius stream at heliocentric distances of around 120 kpc called the spur feature [5] (group of stars at longitudes in the Sagittarius coordinate system between 160-170 deg & heliocentric distances above 120 kpc in Figure 2) as predicted by these models ✓
- no velocity information for these stars is available **X**

Figure 1: Blue horizontal branch star spectrum



Very Large Telescope optical spectroscopy for 25 photometrically selected blue horizontal branch stars in spur feature

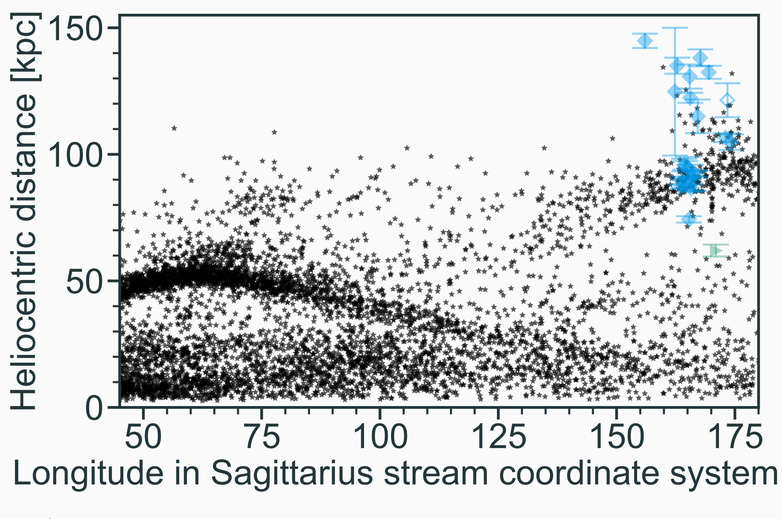
The targets (diamond & right triangle symbols in Figure 2) were selected from list of blue horizontal branch stars in the spur feature of the Sagittarius stream in Starkenburg+[8] using a combination of Pristine *CaHK* narrow- [7] & broad-band photometry such that they show colors indicative of blue horizontal branch stars.

We additionally observe radial velocity standard stars listed in Soubiran + [6] sample & close in the sky to our sample candidate blue horizontal branch stars.

We aim to

1. determine line-of-sight velocities & their accuracy.
2. disentangle bona fide blue horizontal branch stars in our candidate list from contaminating blue straggler stars.
3. ascertain whether the line-of-sight velocities derived from this spectroscopic dataset of the confirmed blue horizontal branch stars provide further observational constraints on the models outlined above.

Figure 2: The chart below shows the breakdown of the sample of RR Lyrae stars from Sesar + [4] (small, black star symbols) across the orbital plane of the Sagittarius stream (longitude in the Sagittarius stream coordinate system as defined by Belokurov+[1]) & different heliocentric distances where the spur feature at 160-170 deg is visible together with our sample of candidate blue horizontal branch stars (blue, diamond symbols & cyanish, right triangle symbol) in the same region of the sky.



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